COLUMBIA RIVER REGIONAL FORUM

JOINT TECHNICAL MANAGEMENT TEAM/ IMPLEMENTATION TEAM MEETING NOTES

February 21, 2001 9:00 a.m. - 4:30 p.m.
CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE PORTLAND, OREGON

TMT Internet Homepage: http://www.nwd-wc.usace.army.mil/TMT/index.html

I. Greetings, Introductions and Review of the Agenda.

The joint February 21, 2001 meeting of the Implementation Team and the Technical Management Team, held at the Corps of Engineers' Northwest Division headquarters in Portland, Oregon, was chaired by Rudd Turner of the Corps and facilitated by Donna Silverberg. The agenda for the February 21 meeting and a list of attendees are attached as Enclosures A and B. Please note that this is a summary, not a verbatim transcript, of items discussed and decisions made at today's meeting; copies of any enclosures referenced can be obtained by calling Kathy Ceballos at 503/230-5420.

2. Current System Conditions.

Turner reported that the most recent power system emergency was lifted late yesterday. Overall, he said, the current operational objective is to meet chum and power system needs, while storing water to the extent feasible in the upper basin storage reservoirs for summer fish and power needs. Turner said daily average flows at Bonneville have been running between 130 and 153 Kcfs over the past week; for the most part, these flows have been needed to maintain the 11.7 foot minimum tailwater elevation at that project during a low-tide period. Turner noted that Bonneville's tailwater elevation peaked at 14 feet on Friday when peak flows occurred.

At John Day, Turner continued, the Corps has authorized a special forebay elevation of 261.5 feet this week, a foot lower than normal, to provide some additional flexibility. Dworshak outflow was reduced to 2.4 Kcfs on February 16, and reduced further to minimum outflow (1.4 Kcfs) on Monday night, February 19. That's where we are at this point, Turner said – Dworshak continues to release minimum outflow, and the current project elevation is 1502 feet. At minimum outflow, he added, the project is just about passing inflow.

At Libby, said Turner, the Corps reduced outflow yesterday from 15 Kcfs to 9 Kcfs in 2 Kcfs hourly increments. One thing we wanted to discuss today is the possibility of reducing Libby outflow further, to 6 Kcfs, he said. Scott Bettin said BPA would like to reduce Libby outflow as soon as possible -- by this afternoon, if we can, he said. Turner added that the current elevation at Libby is 2393, with inflows of 2 Kcfs-4 Kcfs.

Pat McGrane said Grand Coulee elevation is now 1234 feet; the project filled almost two feet over the weekend. Hungry Horse is currently at elevation 3501, three feet below its IRC minimum elevation. McGrane said Hungry Horse outflow was 6 Kcfs on Friday; it was ramped down to 4.4 Kcfs yesterday, and down to 3.8 Kcfs today, following the 600 cfs per day ramping rate in the USFWS BiOp. We have been asked to increase that ramping rate somewhat in order to save water, he said; perhaps we can talk about that later today. Howard Schaller said USFWS personnel have been discussing this issue internally; he said that, if the Hungry Horse rampdown rate is increased, the Fish and Wildlife Service's preference would be to ramp down during daytime hours rather than nighttime hours. Why? Jim Ruff asked. Radio-tag data indicate that bull trout tend to move into shallow-water areas during the night, Jim Litchfield replied – during the day, they hold in deeper water.

Litchfield said the State of Montana has no opposition to the faster ramping rate, which would be 600 cfs per hour and day at the current rate of discharge. So actually, that's no change to the current ramp rate? McGrane asked. Correct, Litchfield replied. It sounds like we can't resolve this right now, McGrane said; if TMT reaches a different resolution today, please let me know via email.

We're in a surplus flow and power position at the moment, said Therese Lamb; BPA is going to be selling power, so this is an opportunity to save some water, if people want to go to a faster rampdown rate. What's the concern about a faster ramping rate? one participant asked. Bull trout stranding, presumably, although there is no direct data to support that conclusion, Schaller replied. Litchfield and Schaller said they will continue to discuss this issue with their respective agencies, because this is an operational nuance that could continue to be an issue later this spring. I would suggest that, once Montana and the U.S. Fish and Wildlife Service reach a decision, that they contact the action agencies directly; we will then let the TMT know what has been agreed to via email, McGrane said. There was general agreement that this would be acceptable.

Will Libby flows be reduced further once you reach 6 Kcfs? Ron Boyce asked. If weather allows, yes, Scott Bettin replied. Bettin added that, to be clear, BPA would prefer to see Hungry Horse release the flow necessary to meet the 3.2 Kcfs Columbia Falls minimum flow – about 2.7 Kcfs out of Hungry Horse, rather than the 3.8 Kcfs the project is currently releasing.

Moving on to water supply, Turner said there isn't a lot of new information to share this week; he distributed an updated forecast which reflects the February final forecast. As you've already heard, he said, the water supply forecast has continued to decline from both the January and February final. The next handout is an updated family of refill curves, showing end-of-June target elevations reflecting the Corps proposal presented at last week's TMT/IT meeting, graphed against current reservoir elevation and forecast information for each of the storage projects, Turner said. He reminded the group that, under the Corps proposal, Dworshak would refill to elevation 1580 feet on June 30, Libby to elevation 2443 feet, Hungry Horse to elevation 3540 feet. The group also briefly discussed the flood control target points for each project.

Are we implementing VAR-Q this year, even if it's a paper exercise at Hungry Horse? Litchfield asked. We did officially switch over to VAR-Q, although the elevations don't reflect that because of the water year, Bettin replied.

Power system status? Silverberg asked. Again, the power system emergency was lifted yesterday afternoon, said Bettin; we're now generating more power than we need, and the power system is back to normal. The headwater projects started backing off Friday afternoon, as temperatures throughout the region began to warm, and we're now trying to store as much water as possible, Bettin said. The current operational strategy is to maintain the 11.7-foot minimum tailwater elevation for chum below Bonneville, he said.

Status of the chum emergence? Silverberg asked. The first emergent chum was logged on February 9 this year, Jim Nielsen replied; they saw another on February 12, and 26 during yesterday's redd survey. The field crews observed two redds that were isolated from the river, but still had water in a pocket or depression, in which chum were emerging from the gravel, then going back down again. We will be developing projections of peak emergence timing, together with start and stop dates, and will share that information with TMT as it becomes available, he added. One thing to bear in mind is that the Hamilton/Hardy Creek chum will emerge later – around mid-March, Schaller said. At Bettin's request, Boyce said he will bring a chum fry mortality to show the TMT at a future meeting.

Turner noted that the Spring Creek Hatchery release is coming up soon; the next TMT meeting is March 7, so if a special operation is needed, the action agencies need to know soon. We may need a TMT conference call next Wednesday, February 28, to discuss that, said Paul Wagner. Boyce added that FPAC will be discussing the Spring Creek release at its meeting next Tuesday, so they should have a recommendation at that point.

3. New System Operational Requests.

No new SORs were presented at today's meeting.

4. Recommended Operations.

Turner said the Corps' operational recommendation would be to release the lowest possible discharge from the headwater storage projects necessary to meet power system needs – 2.7 Kcfs at Hungry Horse, 1.2 Kcfs from Dworshak and 6 Kcfs from Libby. Also, he asked, is it still necessary to maintain an 11.7-foot minimum tailwater elevation below Bonneville? We're at a point in the season when we could drop flows below that level, from a power production standpoint, Turner said, if the salmon managers were willing to consider a slightly lower elevation now that emergence has begun – 11 feet, for example.

Lamb referred the group to the attachment titled "Federal Agencies' Proposed Principals for 2001 FCRPS Operations," dated February 20. Six agencies have been working on this, she said – BPA, the Corps, NMFS, EPA, USFWS and the Bureau of Reclamation. It was developed with the regional executives, she said; it would be a good idea to spend some time talking to

others in the region, with the goal of reaching agreement on a long-term operational strategy by March 2. In response to a question, Ruff said all six federal agencies support this proposed strategy.

Lamb provided a brief overview of this document, which is attached as Enclosure D. Please refer to this document for complete details of Lamb's presentation. The proposed federal strategies included the following main points:

Actions Preceding A Power System Emergency Declaration

In order to meet Pacific Northwest load requirements the following actions will be taken prior to declaring a power system emergency:

- Take all steps to provide for voluntary conservation
- Implement conservation measures to the extent possible
- Exercise contract provisions that reduce firm load obligations
- Pursue purchase of load reductions
- Pursue purchases consistent with economic criteria
- Pursue acquisition of irrigation pumping load or
- Pursue BPA financial options (will be further detailed)

Power Emergencies: Preliminary Criteria and Process

1. Assuming an adjustment in FCRPS operations is required to meet power demands, preliminary criteria for declaring a power system emergency are:

- **Power System Reliability Due to Insufficiency**. Defined as insufficiency of electrical generation to meet Pacific Northwest electrical demand. May also be measured using a quick rise in prices over a few hours or days as an economic indicator of resource scarcity.
- **Power System Reliability Due to Insufficient Funds to Acquire Sufficient Electrical Generation and Maintain Other BPA-Funded Activities, Including Programs to Protect, Mitigate and Enhance Fish and Wildlife**. Triggered by greater than a XX% probability of having negative cash reserves in any month in fiscal year 2001. In the interim, to ensure purchase exposure is not in excess of the XX% probability, BPA will make reasonably priced purchases. (All analysis to date has utilized a 20% probability as the threshold).

Boyce observed that these criteria are too vague to allow others in the region to make an informed judgement of what could trigger a power emergency declaration; he requested that BPA provide more clarity on this issue. Rob Walton agreed. In response to a question from Boyce, Lamb said either of the two cases above could trigger a power system emergency – it is A or B, not A *and* B, she said.

In response to another question, Lamb said Treasury repayment is no longer a concern for Bonneville; you will not find it in this document, she said, adding, however, that there is still some discussion within BPA about what the agency's end-of-year cash reserve needs to be. The group devoted a few minutes of discussion to the relevance of BPA's financial health to decisions affecting fish and wildlife in the region; several participants made the point that the two are intimately linked.

Moving on, Lamb touched on:

2. Procedures to finalize preliminary criteria for declaring a power system emergency include:

- Discuss with state fisheries agencies, tribes, governors' offices and other interested parties in the region, the proposed criteria for declaration of an emergency.
- Finalize the criteria for declaring any additional power emergencies by March 2, 2001.

3. All power emergencies will be declared consistent with the TMT's Interim Protocols for Emergency Operations, dated September 22, 2000, or as subsequently amended, which may be found at http://www.nwd-wc.uscae.army.mil/TMT/2000/ManPlan/emerprotocl0922.PDF.

February and March 2001 Operations as Proposed by Federal Agencies.

- Base chum operation of at least 11.7 tailwater below Bonneville.
- Base operation of up to 130 Kcfs day average flow at Bonneville.
- Pending the adoption of final criteria for declaration of an emergency, it is understood any power operation above 130 Kcfs day average flow at Bonneville will require the declaration of an emergency, and that other power operations may require such a declaration if they also require an adjustment in FCRPS operations.
- Grand Coulee will be operated with the objective to be at or above elevation 1225 feet through March. Deeper drafts may be necessary to respond to changing conditions and priorities.
- Operations will be planned/implemented with the objective of avoiding drafting Grand Coulee at a rate of greater than 1.5 feet.
- Dworshak will be operated with the objective of operating at minimum release levels in order to maximize refill for summer flow augmentation and temperature control. Higher releases may be necessary to respond to changing conditions and priorities.
- Headwater storage reservoirs may be used to balance items 1-5 above, including, but not limited to, consideration of ramping rates at Hungry Horse and Libby for bull trout. Daily and hourly ramping rates at Hungry Horse and Libby may be exceeded during power and transmission system emergencies. In addition, variances to those ramping rates will be negotiated through the TMT process during years where runoff forecasting or storage shortfalls occur, or when variances are necessary to provide augmentation water for other listed species.
- Consistent with existing procedures, convene TMT to seek consensus and recommendations to Federal operators on FCRPS project operations necessary to achieve

the principals above, with elevation to Implementation Team or Regional federal Executives, as necessary.

Proposed Operational Priorities for 2001.

1. Recognizing that conditions may change, the following are the initial priorities for fish operations in the event full spill and/or flow provisions cannot be implemented in 2001.

a. Power/chum flows through emergence or April 10, 2001, whichever comes first
b. Full fish transportation in the Snake River and consideration of transportation from McNary Dam in the spring.
c. Spring spill operations at mainstem FCRPS dams.
d. Balance summer flow augmentation (June 30 refill) and spring spill operations
i) Refill of Dworshak has highest priority for providing fish flow and water quality benefits
ii) Ensure sufficient water in Hungry Horse and Libby to provide bull trout minimum flows
e. Summer spill operations at mainstem FCRPS dams
f. Vernita Bar flows
g. Spring flow augmentation, with emphasis on May.

2. Monitor and evaluate (with EPA technical assistance) and consider effects on water quality and any applicable water quality standards, in determining priorities.

3. Consistent with existing procedures, convene TMT to seek consensus on, and provide greater definition to, these priorities, with elevation to Implementation Team or Regional Federal Executives, as necessary.

4. By March 2, 2001, develop a plan for spring and summer operations based on the agreed-upon priorities.

These proposed priorities reflect the fact that this is such a poor water year, as well as the fact that it is extremely important top the region to maintain BPA's financial viability, said Ruff. The intent is to provide the greatest possible biological benefit for the greatest number of listed species. In response to a question, Lamb said the fact that the federal agencies have agreed that protection for the chum should be the highest priority is primarily a reflection of the fact that flows have needed to be near 130 Kcfs this winter, and may need to stay at or near that level through March, to ensure power system reliability. What happens when loads drop significantly and those two diverge in the future? Litchfield asked. We would need to make a decision, said Lamb -- reduce Bonneville flows to, say, 115 Kcfs and conserve water for use later in the summer, or continue to maintain the 11.7-foot Bonneville tailwater elevation to protect the chum redds.

The group discussed the potential effects of the current cool, wet Pacific Decadal Oscillation (PDO) cycle combined with the current El Niño conditions; essentially, said Ruff, for the first time since 1973, we have cool, wet ocean conditions and dry climate and water supply

conditions. For that reason, he said, monitoring and evaluation are particularly important this year.

In response to a question from Litchfield, Lamb said this IT/TMT group is the first that has seen this document; she assured the group that, if the TMT has specific changes to the proposed strategy, the regional executives are absolutely committed to incorporating those recommendations into the proposed strategies to the greatest extent feasible. Again, she said, this is not a done deal, and the federal agencies definitely want the input of the states, tribes and others in the region – that is a requirement of the Biological Opinion.

Various parties, including Montana and CRITFC, expressed the concern that while the federal parties always give lip service to the idea of cooperative regional decision-making, as a practical matter, the action agencies tend to simply ignore outside input, make the decisions and inform the region later. Ruff replied that the federal agencies are fully aware that Idaho and Montana, Washington, Oregon and CRITFC have all developed, or are in the process of developing, their own strategic proposals for system operations this year. We want that input, and will give it all possible consideration, said Ruff – we hear your concerns, and will be responsive to them. Again, he said, this is a draft proposal – it is not etched in stone, said Ruff.

Schaller noted that this unified federal strategy recommends maintaining the 11.7-foot tailwater elevation below Bonneville. The Corps isn't recommending an 11-foot tailwater elevation, said Turner; we're just asking the question. If the TMT now feels an 11-foot tailwater elevation would be acceptable, said Lamb, the plan can be modified to reflect that – it is intended as a starting-point for our discussion, not as a final plan.

Silverberg asked whether anyone had additional comments or items for clarification regarding the proposed federal strategies. Has there been any discussion of mitigation among the federal parties? Nielsen asked. We have said that we will consider mitigation, Lamb replied. Ruff added that, while there is no specific, detailed mitigation proposal at this time, NMFS expects one to be developed as the season progresses. In response to another question, Lamb said she anticipates no difficulty in documenting and accounting for the items to be mitigated for after the fact.

Boyce said it is hard for him to believe that NMFS would have anticipated such a disastrous year in its consultations on the BiOp; I would urge the federal parties to begin discussing opportunities for in-season mitigation, he said. Bettin observed that this is such a poor water year that it would not have been possible to fully implement the BiOp in 2001, regardless of the power operation chosen.

Again, mitigation is something we have talked about, said Lamb; we are very interested in any thoughts others in the region may have on this subject, but the federal parties have not yet developed a coordinated, unified position on the mitigation issue. We are also interested in any inexpensive in-season mitigative actions people may be able to suggest, she said; however, more expensive items will likely have to wait for a future year.

Various TMT participants weighed in with minor linguistic changes for the "Proposed Principals" document, which Ruff said he will incorporate into a new draft of this proposal. Boyce said it would be helpful if the federal parties could separate out ESA-related actions from actions driven by power system needs. The power operation, at this point, needs about 130 Kcfs flow at Bonneville, Lamb replied; as it happens, that is also what is needed to maintain the 11.7-foot tailwater elevation below Bonneville. If it was strictly a power operation, however, we would be fluctuating flow during light load hours and weekends; we have not been doing that, Lamb said.

Boyce noted that the spring spill and power operations described in Enclosure D are somewhat different than the operations BPA has been discussing – this shows the power operation continuing into April, he said, with slightly lower volumes of spring spill. I don't believe the power operation is substantially different, Lamb replied; with respect to the spill program, our analysis has shown for some time that it is going to be difficult to implement the spring spill program this year. What we have repeatedly said is that the spring is the most difficult period for BPA, from a cash-flow perspective, said Lamb; NMFS has begun to indicate some willingness to discuss the tradeoffs between spring spill and summer flow augmentation in this very difficult water year.

It is difficult to provide meaningful feedback on the federal proposal without more detail on items like what type of spring spill program is being proposed, said Boyce. That is why we put this on the table, Bettin replied – we would like to get your input as to how the available resources should be used. Turner observed that, as the TMT works through its pre-season planning process, many of these questions will likely be answered.

At this point, Bob Heinith provided an overview of the CRITFC proposal for federal management of the FCRPS for the 2001 salmon migration (attached as Enclosure E). Among the tribal plan's key points and recommendations:

Decision-Making

- The tribes expect a seat at the table when the federal agencies make their decisions on how the FCRPS will be operated this year
- The TMT process does not work for the tribes. The federal operators and NMFS should use CBFWA as the technical forum to discuss river operations where tribes can have input. Issues should be raised to the executive committee table.

Energy and Water Conservation

- Late winter and early spring flows below Bonneville are maintained to meet BPA's stated economic viability criteria
- BPA should immediately invoke aggressive energy conservation measures, beyond voluntary pleas to the public. BPA should offer customers economic incentives to conserve energy.
- Irrigators in the Upper Snake and Columbia Basin Irrigation Project should be "bought

out" by BPA for mainstem water withdrawals and energy normally consumed by agricultural production. Water and land acquisition programs should be implemented immediately.

- BPA should renew the contract with Idaho Power to allow flexibility in flow augmentation through power exchanges.

Runoff Forecast

- The Plan assumes that the current 70% of normal precipitation pattern will continue into spring, while the River Forecast Center is continuing to predict normal precipitation. CRITFC believes a continuing pattern of below-normal precipitation is likely. Runoff in the Plan is based on 70% of normal precipitation.

Flow and reservoir Management

- Available storage and runoff is shaped to meet peaking hydrographs at Priest Rapids, Lower Granite and The Dalles index points. The object is to provide some flushing flows during the main portions of the juvenile and adult migrations.
- Meeting Clean Water Act standards for dissolved gas and temperature is a high priority; juvenile salmon should be left in-river to avoid high temperatures in screen and transportation systems.
- Reservoirs are left with some storage at the end of the migration season as a buffer for a possible 2002 El Niño water year, as is being forecast by scientists at the University of Washington.
- Refill of Dworshak Reservoir is a high priority. Drafting of Dworshak should be stopped immediately. Some small volumes are allocated for spring flows, but the majority of flow is dedicated to summer migrants and temperature control to attempt to meet Clean Water Act standards. Dworshak is filled to msl 1585 by July 1 for summer migrants and temperature control. Dworshak is left at msl 1520 at the end of the September migration.
- Brownlee storage augments Snake River spring flows and to a lesser extent, early summer flows. Idaho Power Company is asked to follow plan recommendations. NMFS should release a Biological Opinion for the Hells Canyon Complex that includes Plan recommendations.
- The 427 kaf flow augmentation from the Upper Snake is fully provided. This water is passed through the Hells Canyon Complex to augment early summer flows.
- Lake Roosevelt reservoir elevation is restricted to msl 1220 by mid-April 1 which allows runoff refill for spring flows, Hanford Reach juvenile outmigration protection and summer flows.
- Banks Lake provides 200 kaf in August for flow augmentation and energy production. This volume remains in Lake Roosevelt instead of being pumped into Banks Lake.
- Canadian storage is primarily released in the late winter and early spring in order to leave some storage in Lake Roosevelt for salmon migration and energy needs. An additional 700 kaf from Canadian storage is allocated for downstream flows.
- Libby storage is managed for sturgeon flows and downstream salmon migrations. Libby is drafted to avoid drafting Dworshak, which has temperature control capacity. Libby is

drafted to msl 2325 by the end of May and then refills to msl 2359 by September.

- Hungry Horse is drafted in late winter and spring to msl 3488.5 to provide spring flows and summer storage at downstream reservoirs and then refills to msl 3504 by mid-July.
- Power peaking is restricted to avoid stranding of Hanford Reach juvenile fall chinook, especially during key fry susceptibility period (April 1-30). Fluctuations during this period should not exceed +/- 10 Kcfs during a 24-hour period. Monitoring of the reach during emergence and early migration for impacts and emergency protocols are implemented.
- Power peaking is restricted to avoid impacts to fish ladders and other fish passage facilities and to allow proper conduct of treaty fisheries.

Spill

- Repeatedly, spill has been demonstrated to be the most effective and safest means of juvenile project passage and is the only means to enhance survival in the face of low flows (Fishery Managers 1994). Spill also best protects the beneficial use under the Clean Water Act by providing salmon access to lower temperatures found at depth in the reservoirs instead of the higher temperatures found in dam bypass and transportation systems. Spill also provides safer downstream passage for steelhead kelts and adults that fall back over dams than powerhouse routes.
- The 2000 FCRPS Biological Opinion spring and summer spill should be fully implemented in the Lower Columbia and nighttime spring and summer spill should be implemented in the Snake River.
- The Corps of Engineers should complete their timely application for a total dissolved gas waiver to the appropriate water quality agencies.

Dam Facility Operations and Research.

- Fish facilities should be operated according to CRITFC and other salmon managers' recommendations for the Corps of Engineers 2001 Fish Passage Plan. Inspection of facilities should be increased to daily intervals with tribal participation made possible by the federal operators.
- Fish facilities have full components of spare parts and backup systems, consistent with the salmon managers' 2001 Fish Passage Plan recommendations.
- Monitoring systems for water quality are installed throughout the dams and reservoirs by the federal operators with real-time tracking.
- Mainstem research that involves fish handling and tagging and modification to fish protection measures should be extremely limited and should meet consensus tribal and fishery agency approval.

The CRITFC plan also includes detailed flow and project-by-project, month-by-month elevation recommendations, a detailed 2001 spill program schedule, and a copy of the joint CRITFC/USFWS/ODFW/WDFW/IDFG recommendations on the Corps' Fish Passage Plan. Please refer to the CRITFC operations plan for details.

In general, the intent of this plan is to spread the pain in a very poor water year, rather than dedicating the majority of our resources to one or two species, said Heinith. The tribes haven't formally set species priorities, although Hanford Reach fish and spring migrants are very high priorities. Do you intend to revise this plan, because it contains about 10% more water than it now appears we'll receive this year? Bettin asked. Yes, Kyle Martin replied – in fact, I expect to see these volumes drop another 5% beyond that.

Does this represent a change of direction for the tribe, to an emphasis on juveniles rather than saving some water to help returning adults in the fall? Litchfield asked. I wouldn't characterize it that way, Heinith replied – our intent was to simulate, as nearly as possible, a normative hydrograph for spring migrants.

Heinith asked that the TMT participants review the tribal plan and provide any comments they may have to him. In response to a question from Silverberg, Heinith said the reason the tribes feel that TMT does not work for them is that, particularly since 1996, their recommendations have been ignored in that forum. We are interested in participating a forum in which decisions are made and disputes resolved in such a way that everyone is one equal footing, he said. NMFS will be talking directly with the tribes about the development of these operational priorities, as well as their concerns with the Regional Forum, Ruff replied.

I have jotted down several key areas on which we do not yet have consensus or agreement, based on what I've heard today and from other conversations, said Lamb:

- Snake River transport without spill vs. the tribes' recommendation that the spring spill program be implemented.
- Spring transport from McNary
- Balance of refill for summer flow vs. spring flow augmentation, by project
- End-of-August elevations at each project
- Spill (spring and summer)
- Vernita Bar
- Maintaining 11.7-foot tailwater depth at Bonneville until April 10 vs. the need to store water for use this summer and fall

Heinith suggested that the maintenance of fish facilities (fish ladders and bypass systems) within criteria be added to the above list; he observed that the Corps disagrees with the salmon managers about the need to maintain these facilities within criteria. I'm not sure that issue has the same major, systemwide impact as the five issues listed by Therese, said Turner. I just don't want the fish facility issue to get lost, said Heinith – the juvenile migration season is almost upon us. He said he will provide a report on the status of this issue within the FPOM process at the next TMT meeting. At Nielsen's suggestion, the Vernita Bar minimum flow issue was added to Lamb's list; the 11.7-foot tailwater elevation issue, at Schaller's.

We still need to make a conscious decision about whether to continue to maintain the 11.7-foot Bonneville tailwater elevation through April, or whether a lower elevation would be acceptable in order to conserve water once loads begin to drop later this spring, said Litchfield. It

was agreed that this is one of the highest priorities for resolution on the above list, from a time sensitivity standpoint. Nielsen distributed copies of a letter from the Corps to BPA which indicates that it probably isn't feasible to implement the mechanical redd watering idea this year at Ives/Pierce Islands. It's an option we need to pursue, said Bettin, but the bottom line is, it doesn't appear feasible for this year.

After a few minutes of further discussion, the TMT recommended that the 11.7-foot tailwater elevation below Bonneville be maintained until one week from today, with additional flows from Dworshak as needed to maintain that minimum tailwater elevation; this operation will then be re-evaluated at next week's TMT conference call. The fish are emerging, said Wagner; it doesn't appear that it will be necessary to continue the 11.7-foot tailwater operation for much longer

We will hold the headwater storage projects at minimum discharge through February 28, except as needed to maintain the 11.7-foot minimum tailwater elevation at Bonneville, or for power system needs, or to avoid drafting Grand Coulee by more than 1.5 feet per day, Turner said. I'm not prepared to agree to that operation until I talk to some people back in Idaho, said Steve Pettit. We could also agree to maintain the 11.7-foot tailwater elevation below Bonneville until it becomes necessary to increase discharge at Dworshak, at which point we would convene a TMT conference call, Bettin suggested.

After a brief caucus break, Pettit said he had spoken to IDFG's director and anadromous fish manager; IDFG's position is that they are unwilling to use Dworshak to maintain the 11.7-foot minimum tailwater elevation below Bonneville for chum. If it's a power emergency, of course, all bets are off, but Idaho opposes increasing discharge from Dworshak to protect chum at this time, Pettit said. Heinith and Greg Haller said the CRITFC and Nez Perce tribes also agree that Dworshak not be drafted to protect chum at this point in the season.

Where does that leave us? Silverberg asked. Nielsen said Washington is willing to support the idea of maintaining the 11.7-foot minimum elevation below Bonneville until an additional draft from Dworshak becomes necessary, at which point a TMT conference call will be convened. In that case, said Turner, through February 28, the action agencies will continue to release minimum outflow from Dworshak; drop Hungry Horse outflow to 2.7 Kcfs, the minimum necessary to maintain the flow at Columbia Falls; and, reduce Libby discharge to 6 Kcfs as soon as possible. If it becomes necessary to increase Dworshak discharge in order to maintain the 11.7-foot minimum tailwater elevation below Bonneville, the Corps will convene an emergency TMT conference call, Turner said.

What's the point of a conference call, given the fact that we have a fundamental disagreement on this issue, and the position of the agencies here is unlikely to change? Litchfield asked. It will give me an opportunity to reconfirm that with policy people in Washington, Nielsen replied. In response to a question from Turner, Ruff said NMFS supports maintaining the 11.7-foot minimum tailwater elevation below Bonneville, up to the point that it would be necessary to increase Dworshak outflow to maintain it. So is there a need for an emergency call? Silverberg asked. After a few minutes of additional discussion it was agreed that an emergency

call would be warranted under those circumstances. It was observed that other options beyond drafting Dworshak, such as drafting Grand Coulee below elevation 1225 or changing the operation at Bonneville, exist.

I would like the record to show Grant County PUD is concerned about continuing to draft Grand Coulee for chum, because of the impacts of this operation on Hanford Reach flows this spring, said Richelle Harding.

5. Review of Water Management Plan.

It was agreed to defer discussion of this item until the March 7 TMT meeting.

6. Update on NWPPC Request for TMT Decision Rationale.

It was agreed to defer discussion of this item until the March 7 TMT meeting.

7. Other.

A. EPA Temperature Model. Mary Lou Soscia said EPA had agreed to model the operational scenarios provided by Bonneville for the summer period to give us a preliminary idea of what kind of temperatures we might see; she distributed a handout showing the results of these model runs.

There were three scenarios, Soscia said, we used the 1977, 1994 and 1998 water and temperature years as the basis for those runs. The bottom line, she said, is that we are likely to see very high temperatures this year, particularly at Bonneville – up to 23.5 degrees C. The different cases and scenario years provided by BPA do not show wide variation in predicted temperatures; however, the choice of sample year (1977, 1994, 1998 etc.) does change the predicted temperatures noticeably. The EPA model work also indicates that Grand Coulee flows will be particularly important this year. What about the impact of Dworshak and Brownlee operations? Litchfield asked. I definitely think how those projects are used this year could have a noticeable effect on temperatures, Soscia replied.

Ruff noted that this is a good example of the kind of information the new modeling tools can give us; as runoff shape and volume, weather conditions and system operations become clearer as the season progresses, we will be able to obtain more precise information to aid our decision-making, he said. Can we get that data from the action agencies, as the operational strategies are set? Soscia asked. There was general agreement that this would be possible. Bob Heinith said the Tribes are recommending some very specific flows from Dworshak this summer; he asked whether EPA could model the temperature effects of that operation. We will be happy to do so, Soscia replied.

Turner suggested that this issue – the development of various operational and runoff scenarios for water quality modeling – be added to the March 7 TMT meeting agenda. There was general agreement that this would be useful. Soscia said she will ensure that EPA's Ben Coates attends the March 7 TMT meeting. Lamb said she is somewhat concerned about the delay

inherent in this process; BPA's hope is that the TMT can develop a long-term system operational strategy by March 2, and this issue will not even be discussed again until March 7. We can certainly lay out some general priorities – saving water for use later in the summer period vs. using that water for flow augmentation this spring, for example, Litchfield said. We could also attempt to reach agreement on an operational strategy, and agree to modify that strategy as needed as further information comes in, Lamb said.

8. Next TMT Meeting Date.

After some discussion about how to most efficiently conduct TMT business next week, it was agreed to cancel the TMT conference call which had been planned for 1 p.m. Wednesday, February 28; it was further agreed that there will be additional discussion of TMT-related items at the March 1 IT meeting next week. The next face-to-face meeting of the Technical Management Team was set for 9 a.m.-noon on Wednesday, March 7. Meeting notes prepared by Jeff Kuechle, BPA contractor.

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